

Application Number 09/878,875  
Responsive to Office Action mailed December 1, 2004

### AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

#### **Listing of Claims:**

- Claim 1 (Previously Presented):** A method comprising:
- obtaining a white point correction for a display device;
  - obtaining a chromatic correction for the display device; and
  - generating in a device-independent color space adjusted device-independent color coordinates for the display device based on device-independent coordinates associated with a hard copy in the device-independent color space, the white point correction and the chromatic corrections.
- Claim 2 (Original):** The method of claim 1, further comprising:
- obtaining the white point correction by determining a white point correction matrix; and
  - obtaining the chromatic correction by determining a chromatic correction matrix.
- Claim 3 (Original):** The method of claim 2, wherein determining a white point correction matrix comprises:
- displaying a color on a display device, the color being defined by an original white point matrix in a D50 illuminant condition; and
  - adjusting at least some white point matrix values so that visual appearance on the display device is visually equivalent to a print.
- Claim 4 (Original):** The method of claim 3, wherein adjusting at least some white point matrix values comprises adjusting maximum phosphor settings on a display.



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**Claim 5 (Original):** The method of claim 2, wherein determining a chromatic correction matrix comprises:

displaying a color on a display device, the color being defined by an original chromatic matrix in a D50 illuminant condition; and

adjusting at least some chromatic matrix values so that visual appearance on the display device is visually equivalent to a print.

**Claim 6 (Original):** The method of claim 5, wherein adjusting at least some chromatic matrix values comprises adjusting chromaticity values in an RGB color space.

**Claim 7 (Previously Presented):** The method of claim 6, wherein adjusting chromaticity values in an RGB color space comprises adjusting chromaticity values in an AdobeRGB(D50) color space.

**Claim 8 (Currently amended):** The method of claim 1, wherein generating adjusted color coordinates based on the white point and chromatic corrections comprises generating a single correction matrix that includes both the white point and chromatic corrections.

**Claim 9 (Previously Presented):** A method comprising:  
determining device-independent coordinates in a device-independent color space defining a color on a hard copy; and  
generating adjusted device-independent coordinates in the device-independent color space using the determined device-independent coordinates in the device-independent color space, a white point correction and a chromatic correction.

**Claim 10 (Original):** The method of claim 9, further comprising displaying the color using the corrected coordinates.

**Claim 11 (Original):** The method of claim 10, wherein the displayed color is visually equivalent to the color on the hard copy.



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**Claim 12 (Original):** The method of claim 9, wherein the white point correction is a white point correction matrix and the chromatic correction is a chromatic correction matrix.

**Claim 13 (Original):** The method of claim 12, further comprising determining the white point correction matrix and the chromatic correction matrix.

**Claim 14 (Original):** The method of claim 13, wherein determining the white point correction matrix comprises:

displaying a color on a display device, the color being defined by an original white point matrix in a D50 illuminant condition; and

adjusting at least some white point matrix values so that visual appearance on the display device is visually equivalent to a white printout viewed in the D50 illuminant condition.

**Claim 15 (Original):** The method of claim 13, wherein determining the chromatic correction matrix comprises:

displaying a color on a display device, the color being defined by an original chromatic matrix in a D50 illuminant condition; and

adjusting at least some chromatic matrix values so that visual appearance on the display device is visually equivalent to a color printout viewed in the D50 illuminant condition.

**Claim 16 (Previously Presented):** A method comprising:

converting device-dependent coordinates that define a color in a printing device to device-independent coordinates in a device-independent color space;

adjusting the device-independent coordinates in the device-independent color space using a white point correction and a chromatic correction; and

converting the adjusted device-independent coordinates in the device-independent color space to device-dependent coordinates that define a color in a display device.



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Claim 17 (Original): The method of claim 16, further comprising displaying the color using the corrected coordinates.

Claim 18 (Original): The method of claim 17, wherein the displayed color is visually equivalent to the color on the hard copy.

Claim 19 (Original): The method of claim 16, wherein the white point correction is a white point correction matrix and the chromatic correction is a chromatic correction matrix.

Claim 20 (Original): The method of claim 19, further comprising determining the white point correction matrix and the chromatic correction matrix.

Claim 21 (Original): The method of claim 20, wherein determining a white point correction matrix comprises:

displaying a color on a display device, the color being defined by an original white point matrix in a D50 illuminant condition; and

adjusting at least some white point matrix values so that visual appearance on the display device is visually equivalent to a print.

Claim 22 (Original): The method of claim 20, wherein determining a chromatic correction matrix comprises:

displaying a color on a display device, the color being defined by an original chromatic matrix in a D50 illuminant condition; and

adjusting at least some chromatic matrix values to that visual appearance on the display device is visually equivalent to a print.



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**Claim 23 (Previously Presented):** A method comprising:  
generating adjusting device-independent coordinates in the device-independent color space using a white point correction and a chromatic correction;  
adjusting maximum phosphor values for a display device based on the adjusted device-independent coordinates in a device-independent color space so that a first color displayed on the display device matches white in a defined illuminant condition for a hard copy;  
and  
adjusting color settings based on the adjusted device-independent coordinates in the device-independent color space so that a second color displayed on the display device matches a defined color in the defined illuminant condition.

**Claim 24 (Original):** The method of claim 23, wherein the defined illuminant condition is a D50 illuminant condition.

**Claim 25 (Original):** The method of claim 23, wherein adjusting color settings comprises adjusting color settings within a computer program.

**Claim 26 (Original):** The method of claim 23, wherein adjusting color settings comprises adjusting chromaticity values in an RGB color space.

**Claim 27 (Previously Presented):** The method of claim 25, wherein adjusting chromaticity values in an RGB color space comprises adjusting chromaticity values in an AdobeRGB(D50) color space.



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**Claim 28 (Previously Presented):** A method comprising:

- creating a first visual representation of an image on a hard copy; and
- creating a second visual representation of the image on a display device including adjusting device-independent coordinates in a device-independent color space based on a white point correction and a chromatic correction, such that the first visual representation and the second visual representation have different device-independent coordinates in the device-independent color space,

- wherein both white point and saturated colors on the display device are a good visual match to those of the hard copy.

**Claim 29 (Original):** The method of claim 28, wherein the both white point and saturated colors on the display are visually equivalent to those of the hard copy.

**Claim 30 (Previously Presented):** A system comprising:

- a display device;

- a memory device; and

- a processor coupled to the memory device and the display, wherein the processor:

- obtains a white point correction for the display device from the memory device;

- obtains a chromatic correction for the display device from the memory device;

- and

- generates in a device-independent color space adjusted device-independent color coordinates for the display device based on device-independent coordinates associated with a hard copy in the device-independent color space, the white point correction and the chromatic corrections.



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**Claim 31 (Previously Presented):** A system comprising:

- a display device;
- a memory device; and
- a processor coupled to the display device and the memory device, wherein the processor:
  - generates adjusted device-independent coordinates in the device-independent color space using a white point correction and a chromatic correction;
  - adjusts maximum phosphor values of the display device based on the adjusted device-independent coordinates in a device-independent color space so that a first color displayed on the display device matches white in a defined illuminant condition for a hard copy; and
  - adjusts color settings based on the adjusted device-independent coordinates in the device-independent color space so that a second color displayed on the display device matches a defined color in the defined illuminant condition.

**Claim 32 (Previously Presented):** The system of claim 31, wherein the defined illuminant condition is a D50 illuminant condition.

**Claim 33 (Original):** The system of claim 31, wherein adjusting color settings comprises adjusting chromaticity values in an RGB color space.

**Claim 34 (Previously Presented):** The system of claim 31, wherein adjusting chromaticity values in an RGB color space comprises adjusting chromaticity values in an AdobeRGB(D50) color space.



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Claim 35 (Previously Presented): A system comprising:

a display device;

a memory device; and

a processor coupled to the display device and the memory device, wherein the processor:  
receives a first set of image data from the memory device defining a first visual

representation of an image on a hard copy;

creates a second set of image data defining a second visual representation of the image for  
display on the display device including adjusting first device-independent coordinates associated  
with the first set of image data in a device-independent color space based on a white point  
correction and a chromatic correction to generate second device-independent coordinates  
associated with the second set of image data in the device-independent color space; and

displays the image on the display;

wherein both white point and saturated colors of the image on the display are a good  
visual match to those of the hard copy.

Claim 36 (Original): The system of claim 35, wherein both white point and saturated colors of  
the image on the display are visually equivalent to those of the hard copy.

Claim 37 (Previously Presented): A computer readable medium carrying program code that  
when executed:

receives a white point correction for a display device as input;

receives a chromatic correction for the display device as input; and

generates in a device-independent color space adjusted device-independent color  
coordinates for the display device based on device-independent coordinates associated with a  
hard copy in the device-independent color space, the white point correction and the chromatic  
corrections.



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**Claim 38 (Previously Presented):** A computer readable medium carrying program code that when executed:

generates adjusted device-independent coordinates in the device-independent color space using a white point correction and a chromatic correction;

adjusts maximum phosphor values of the display device based on the adjusted device-independent coordinates in a device-independent color space so that a first color displayed on the display device matches white in a defined illuminant condition for a hard copy; and

adjusts color settings based on the corrected device-independent coordinates in the device-independent color space so that a second color displayed on the display device matches a defined color in a defined illuminant condition.

**Claim 39 (Previously Presented):** The computer readable medium of claim 38, wherein the defined illuminant condition is a D50 illuminant condition.

**Claim 40 (Original):** The computer readable medium of claim 38, wherein adjusting color settings comprises adjusting chromaticity values in an RGB color space.

**Claim 41 (Previously Presented):** A computer readable medium carrying program code that when executed:

receives a first set of image data from the memory device defining a first visual representation of an image on a hard copy;

creates a second set of image data defining a second visual representation of the image for display on the display device including adjusting first device-independent coordinates associated with the first set of image data in a device-independent color space based on a white point correction and a chromatic correction to generate second device-independent coordinates associated with the second set of image data in the device-independent color space; and

displays the image on the display;

wherein both white point and saturated colors of the image on the display are a good visual match to those of the hard copy.



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**Claim 42 (Original):** The computer readable medium of claim 41, wherein both white point and saturated colors of the image on the display are visually equivalent to those of the hard copy.

**Claim 43 (Previously Presented):** A computer readable medium comprising a color profile data structure thereon, the color profile data structure corresponding to a display device and including adjusted device-independent illuminant condition values that do not correspond to actual device-independent illuminant conditions associated with the display device, such that colors rendered on the display device using the color profile data structure are visually equivalent to colors rendered on a printing device.

**Claim 44 (New):** A method for correcting output of a display device when images rendered by the display device have measured device-independent color coordinates that are the same as measured device-independent coordinates for the images rendered on a hard yet the images rendered by the display device look visually different than the images rendered on the hard copy, the method comprising:

- obtaining a white point correction for a display device;
- obtaining a chromatic correction for the display device; and
- generating in a device-independent color space adjusted device-independent color coordinates for the display device based on non-adjusted device-independent coordinates associated with the hard copy, the white point correction and the chromatic corrections.